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(54) Title: METHOD OF ISOLATING AND CULTURING MESENCHYMAL STEM CELL DERIVED FROM UMBILICAL CORD BLOOD



(57) Abstract: The present invention relates to a method of isolating and culturing mesenchymal stem cells using umbilical cord blood that is most ideal for cell therapy. The method comprises adding an anti-coagulant to umbilical cord blood having a volume of more than 45 ml per unit, which is obtained within 24 hours after parturition; diluting the resulting mixture of the anti-coagulant and umbilical cord blood with an  $\alpha$ MEM (alpha-minimum essential medium), followed by centrifugation to harvest monocytes; and subjecting the obtained monocytes into suspension culture in the  $\alpha$ MEM containing Stem Cell Factor, GM-CSF (granulocyte-macrophage colony-stimulating factor), G-CSF (granulocyte colony-stimulating factor), IL-3 (interleukin-3) and IL-6 (interleukin-6).

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